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When all were gathered the electric lights were turned off and the numerous little candles lighted. Such a moment! For a while all seemed to hold their breath as the toys and the silver trimming shimmered in the light of the scores of candles.

When the Egyptian pastor had offered prayer in the name of Him to whom the church owes its Christmas-tide joys, the doctors removed the toys one by one from the tree while the nurses passed them down the aisle from one to another until they finally reached the hands for which they were destined. Then the packages were distributed, so that before the evening came to an end each patient had received a tiny toy and packet containing several good warm garments with his own name on them, showing that all had been remembered though there must have been well over one hundred present.

How the excitement grew as the evening wore on! One old man who, for many years, has been hospital messenger, postman and fire lighter, almost lost his balance as he stood on a bench and shouted and laughed and laughed again until his whole body swayed and his face shone and he quite forgot himself and everyone around in an ecstasy of joy. The people around caught the spirit of his mirth and they, too, let themselves go, so that for a few minutes the room rang with sounds of their joy.

At last they were dismissed and as they filed out, the men through one door, the women through another, each one was handed some fruit. Thus ended a glad and bright evening, the brightest that some present had ever experienced in their lives. Many of those present were followers of the religion of the Prophet of Arabia which, though slack enough and easy on the men who own its sway, brings no joy to womanhood in this world and no hope for the world to come.

Should not we who know the Light of Life ever pray that the true joy of our Christmas-tide may enter the hearts and brighten the lives of these, our brothers and sisters of the East?

THE ADMINISTRATION OF MEDICINES

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In the treatment of disease the physician usually contents himself merely with ordering certain remedies to be given. It remains with the nurse, however, to administer these remedies in such a manner as to obtain their maximum effects.

The efficiency or inefficiency of a remedy depends largely upon the way it is administered. In the proper method of administration, therefore, the nurse wields a subtle power with which she can often produce brilliant effects from remedies of even moderate power. By an improper method of administration a mild effect may not even be produced from a usually potent remedy.

In most hospitals where a relatively ideal condition for nursing exists, the methods for the administration of medicines are usually based on more or less empirical rules. In my experience and in the experience of many others, these rules are often based merely on traditions which have been handed down from nurse to nurse and are not based on sound facts. In time, many of these rules take on a certain local color, so that today the methods for the administration of remedies in one institution may be very diverse from those extant in another similar, equally efficient, institution.

It is my purpose in this series of articles to study the whole field of the administration of all medicines, and I shall endeavor to lift the curtain of empiricism and tradition and bring to bear upon the subject the searchlight of science.

I shall attempt to show that medicines should be administered in a very definite manner according to perfectly well-known physical and chemical laws. Moreover, I shall endeavor to elucidate these laws in a simple manner that the nurse may understand the reasons for the administration of some remedies in one way and other remedies in another way.

It is unfortunate that the teaching of some fundamental chemical facts has heretofore been left out of the nurses' curriculum. The knowledge of many of these simple laws is essential for the proper performance of many practical processes of a nurse's daily routine. With the elevation of the standards of the nursing profession, and with the increase in the requirements for admission to training schools, the curriculum is becoming so modified as to include a study of some of the fundamental chemical and physical laws, so that the nurse of the future will be thoroughly grounded in these essentials for proper, intelligent and ideal nursing.

Medicines are usually administered for one or the other of two distinct purposes: first, to obtain effects only at the site of application, (local effects); second, to obtain effects of other, more remote parts of the body than the site of application (general effects).

ADMINISTRATION OF LOCAL REMEDIES

To obtain local effects, remedies are usually administered in three different forms: first, Solutions and Liniments; second, Pastes or Plasters; third, Ointments.

The principle on which the effects are obtained is merely to make contact of the remedy with the diseased tissue or the bacteria in the tissue.

ADMINISTRATION OF ANTISEPTIC SOLUTIONS

Antiseptic solutions are usually applied for their antiseptic effect, to check the growth of bacteria. To obtain the best antiseptic action from a solution it is necessary to keep the solution constantly in contact with the inflamed tissue or wound and to change it frequently. In this way the maximum antiseptic effect is obtained and the purulent secretions are constantly removed.

The most efficient way in which these results can be obtained is to keep the wound or diseased tissue in a continuous bath of the desired antiseptic solution. This ideal condition, however, is rarely possible for practical reasons, so that we have to be content with an antiseptic bath given for from a half to one hour, frequently repeated, or with wet dressings.

In the use of the antiseptic solutions it is preferable to have the solutions cold, especially if there is considerable inflammation present.

WET DRESSINGS

In most instances antiseptic solutions are applied by means of gauze which has been immersed in the required solution. It is always best to have the gauze take up as large a quantity of solution as possible, since the object of the wet dressing is to keep the antiseptic solution continually in contact with the skin or wound and thus check the growth of the bacteria on these tissues. The dressings should be kept constantly moist by frequently changing them or by covering the outer dressing with rubber tissue. Of these two methods frequent changing is better, since in this way not only are the dressings kept moist but the secretions of the wound are kept drained. Covering wet dressings with rubber tissue is to be avoided. The constant moisture and heat, together with the purulent secretions present under rubber tissue dressings, are just the factors necessary for the growth of bacteria and for the softening of the tissues, especially so since the antiseptic action soon passes off.

The antiseptic action of a solution depends on a chemical combination of the chemical antiseptic with the albuminous bacteria and as soon as all the chemical antiseptic of the solution has combined with some of the bacteria, the solution is no longer efficient, so that frequent change of dressings is the price of efficient antisepsis.

ADMINISTRATION OF LINIMENTS

Liniments are usually applied for their soothing effect to relieve pain. Warmth is usually helpful to such action. For this reason they are best applied on a piece of flannel or lint. This prevents rapid evaporation and keeps the skin warm.

Many liniments are applied by vigorous rubbing on the skin. The effect thus produced is due principally to the vigorous massage and very little, if any, to the liniment itself.

PASTES AND PLASTERS

Pastes and plasters are usually applied to produce the following effects: one, to relieve pain; two, to dilate the blood vessels of the skin, and in this way to withdraw blood from the deeper tissues or organs, thus relieving congestion and inflammation of these organs; three, to produce blisters. The rapidity and character of the effect produced depend on the strength of the drug contained in the paste or plaster. The stronger the drug and the longer the application, the more marked is the effect. The stronger the percentage of drug in the paste or plaster the shorter should be the time of application.

Pastes are usually diluted with flour till the desired strength is obtained. They are then wrapped in a piece of gauze or lint and applied at the site ordered. Plasters should be moistened in luke-warm water and applied on the site ordered.

The usual length of time for the application of ordinary strengths of pastes or plasters is from ten to twenty minutes. However, the nurse should not restrict herself to applying either a paste or a plaster according to the above rule unless she obtains the desired effect but she should vary the time of application, and with the doctor's permission, the strength of the paste so as to obtain the desired effect, that is, relief from pain, production of redness or the formation of a blister.

ADMINISTRATION OF OINTMENTS

Ointments are drugs contained in a menstruum of fat, usually lard. They may be applied to produce either a local or a general effect. We will deal with their use in the production of local effects.

Ointments are the best means of applying remedies to obtain continuous local effects. The fatty menstruum in which the drug is contained dissolves very readily but does not evaporate. In this way continual contact of the drug and tissue is obtained thus producing a continuous maximum effect.

The ointment should be spread on a piece of gauze, flannel or lint and the heat of the body readily dissolves the fat and liberates the contained drug. Ointments should be changed frequently, usually about every day. They should be avoided on discharging wounds or sinuses as they prevent free drainage of the secretions. They, also, may be applied by rubbing, but this method is only recommended when a general effect is desired.

ADMINISTRATION OF REMEDIES TO MUCOUS-MEMBRANE-LINED CAVITIES

Administration of mouth washes and gargles. Mouth washes and gargles are solutions which are applied to affect the mucous-membrane of the mouth and the tissues of the throat. They are used principally to produce a constricting (astringent), or an antiseptic effect on these tissues or both of these effects together.

To produce these effects it is essential that the drug be in contact with every part of the lining membrane of the tissue to be affected. The solution used should be kept moving by means of a current of expired air which the patient should keep constantly passing through the mouth.

Mouth washes and gargles are really efficient only in the mouth proper. To obtain effects on the tissues of the throat, such as the tonsils or pharynx, sprays are preferable, since they are able to reach the diseased tissue which gargles cannot do. In order that a fluid may come in contact with the tonsils or back of the throat, the fluid must be swallowed, since in gargling, the anterior pillars of the throat come in contact with one another, and the current of expired air passing through the mouth in the process of gargling prevents any fluid from reaching the tonsils or back of the throat. Therefore to apply medicines to the tonsils or to the back of the throat the best method is to apply them by means of a spray and not by means of a gargle.

(*To be continued.*)